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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/751,730

01/06/2004

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826.1916

1509

21171 7590 06/21/2007
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EXAMINER

SOL, ANTHONY M

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

06/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

55

Office Action Summary	Application No.	Applicant(s)	
	10/751,730	KIMURA ET AL.	
	Examiner	Art Unit	
	Anthony Sol	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 42 and 43 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 1 is objected to because of the following informalities:

For claim 1, line 12, it is believed that the phrase, "providing server" should state -- providing servers --.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 14, 15, 18 and 19 are rejected under 35 U.S.C. 101 because they claim a program. The phrase "computer-readable-medium" is the accepted language in computer-processing related claims (see MPEP 2106.01). An excerpt from the MPEP 2106.01 is recited below:

Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and USPTO personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said first communications distribution unit" in line 7.

There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the service providing server" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 5, 7, 16, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's Admitted Prior Art ("APA) in view of Pub. No. US 2001/0055285 A1 ("Tomoike").

Regarding claim 1,

The APA shows in fig. 43, a first network unit 101, which is connected to a mobile terminal 100a and has a plurality of input/output points 102 to and from service providing servers 110-112.

The APA further shows in fig. 43 a plurality of first communications distribution units 105 respectively connected to the plurality of input/output points 102.

The APA still further shows in fig. 43, a second network unit 106, connected to a first communications distribution unit 105a.

The APA still further shows in fig. 43, a third network unit 122 connected to the plurality of service providing servers 110-112.

The APA still further shows in fig. 43, a plurality of second communications distribution units 121, which are connected between said second network unit 106 and said third network unit 122, for distributing a series of communications between a mobile terminal 100a and a service providing server 110a to any of the plurality of

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service providing servers 110-112, characterized in that a first communications distribution unit 105a distributes a series of communications between said mobile terminal 100a and service providing servers 110-112 through said second network unit 106.

The APA does not disclose that the series of communications is distributed to **any** of said plurality of second communications distribution units.

Tomoike discloses that **one of** the proxy gateways 18-1 to 18-n (claimed second communications distribution units) which is connected to the mobile terminal 12 is selected (para. 63).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to include a service control point that selects one of the proxy gateways as taught by Tomoike. One skilled in the art would have been motivated to make the combination so that the load of the gateways can always be equally distributed (Tomoike, para. 20).

Regarding claim 2,

The APA discloses a user session (claimed identifier of a session).

The APA does not disclose that each of said plurality of first communications distribution units comprises a same storage contents of distribution destination storage unit storing any of said plurality of second communications distribution units.

Tomoike discloses that based on the load data management table of the load data storage device 32, one of the proxy gateways which is connected to the mobile terminal is selected (para. 63).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to include a load data obtaining device and load data storage device as taught by Tomoike. One skilled in the art would have been motivated to make the combination so that the load of the gateways can always be equally distributed (Tomoike, para. 20).

Regarding claim 3,

The APA discloses that the plurality of service providing servers 110 form a plurality of groups each being configured by servers providing same services (see applicant's spec, pg. 2, lines 19-21).

The APA further discloses that the mobile terminal 100a specifies a representative address for each of the plurality of groups 110-112 to communicate with service providing servers (see applicant's spec, pg. 3, lines 16-22).

The APA further discloses that said second communications distribution unit 121a distributes the series of communications to any of the service providing servers in a group 110a, 110b, 110c specified by the representative address.

Regarding claim 4,

The APA discloses that a grouped service providing server is assigned representative address information, and a client transmits a packet using the representative address information as a destination, and the packet is distributed to any service providing server in the group based on the balancing policy of the load balancer (see applicant's spec, pg. 3, lines 16-22).

Regarding claim 5,

The APA shows a user authentication device 104.

Regarding claim 7,

The APA discloses that a user session is defined for a TCP. The APA further discloses that the communications in a series of TCP connections performed to complete the process are called a user session under the TCP (see applicant's spec, pg. 6, lines 16-25).

Regarding claims 16 and 18,

The APA shows in fig. 43 a mobile terminal 100a and a load balancer 105a, and service providing servers 110-112.

The APA further shows in fig. 43 that a source of the packet received by the load balancer 105a is the mobile terminal 100a.

The APA discloses retrieving mobile device identification information about a

mobile terminal such as the source and destination of the packet, and determining whether or not a service provided by the service providing server of the destination address can be provided for a user of the mobile terminal (see applicant's spec, pg. 3, lines 4-15, *communications are performed between the mobile devices, for example, a mobile phone and a service providing server... Since a server capable of providing a service requested by a client forms a group as described above.* Note that since a server capable of providing a service request is determined, the source and destination of the packet is inherent).

The APA does not disclose a packet gateway device that receives a packet from the load balancer for distributing communications to a service providing server.

Tomoike shows in fig. 1a, proxy gateways 18 to distribute communications to a service provider such as contents server 19.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to include a service control point that selects one of the proxy gateways as taught by Tomoike. One skilled in the art would have been motivated to make the combination so that the load of the gateways can always be equally distributed (Tomoike, para. 20).

Regarding claim 20,

The APA show in fig. 43 a network unit 102a, which is connected to the mobile terminal 100a and has a plurality of input/output points to and from the service providing servers 110-112.

The APA further shows in fig. 43 a plurality of first communications distribution units 105 respectively connected to the plurality of input/output points.

The APA still further shows in fig. 43 a plurality of second communications distribution units 121, connected between said plurality of first communications distribution units 105 and the plurality of service providing servers 110-112, for distributing a series of communications between the mobile terminal 100a and the service providing server 110a to any of the plurality of service providing servers 110-112.

The APA discloses communications between the mobile terminal 100a and the service providing server 110a are performed through any of the plurality of input/output points of the network unit from start to termination of the series of communications (see applicant's spec, pg. 4, lines 15-20, *when a mobile device, for example the mobile device 100a moves during the communications, the input/output point of the service providing server to the IP network 101 dynamically changes*).

The APA does not disclose characterization in which any of said plurality of first communications distribution units distributes the series of communications to a same second communications distribution unit from among said plurality of second communications distribution units.

Tomoike discloses that based on the load management table, **one of** the proxy gateways 18-1 to 18-n (claimed second communications distribution units) which is connected to the mobile terminal 12 is selected (para. 63). Therefore, if the selected gateway, for example 18-1, is continuously the least loaded gateway, then gateway 18-1 would be the same gateway that would be receiving communications from the mobile device.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to include a service control point that selects one of the proxy gateways as taught by Tomoike. One skilled in the art would have been motivated to make the combination so that the load of the gateways can always be equally distributed (Tomoike, para. 20).

8. Claims 6, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view Tomoike, and further in view of Pub. No. US 2002/0052798 A1 ("Nishikado").

Regarding claim 6,

The APA does not show that the second communication distribution unit can distribute the series of communications to a server external to said mobile device communications system. The APA also does not show an accounting information generation unit generating accounting information about a service received by the mobile terminal from the service providing servers.

Tomoike shows in fig. 1, a content server 19 which accessed through the Internet, which inherently is not limited to a mobile device communications network.

Nishikado shows in fig. 1 a charging management apparatus 8 that transmit access charging information (para. 72).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to include the ability to access servers external to the mobile device communications system as taught by Tomoike and to include charging management apparatus as taught by Nishikado. One skilled in the art would have been motivated to make the combination so that mobile subscriber has access to full array of contents available on the Internet and so that the user can be charged for the use of content.

Regarding claims 17 and 19,

The APA shows in fig. 43 a mobile terminal 100a and a load balancer 105a, and service providing servers 110-112.

The APA further shows in fig. 43 that a source of the packet received by the load balancer 105a is the mobile terminal 100a.

The APA discloses retrieving mobile device identification information about a mobile terminal such as the source and destination of the packet, and determining whether or not a service provided by the service providing server of the destination address can be provided for a user of the mobile terminal (see applicant's spec, pg. 3,

lines 4-15, *communications are performed between the mobile devices, for example, a mobile phone and a service providing server... Since a server capable of providing a service requested by a client forms a group as described above.* Note that since a server capable of providing a service request is determined, the source and destination of the packet is inherent).

The APA does not disclose setting the addresses in an accounting record, incrementing a number of packets of an accounting record each time a packet is received from the load balancer until the series of communications terminate, retrieving a packet length from the received packet, and adding the packet length to the packet length of the accounting record, and setting again the source address of the accounting record into identification information about a user of the mobile terminal, and the destination address into information about the service providing server.

Nishikado shows in fig. 1 a charging management apparatus 8 that transmit access charging information. Nishikado discloses making access charge to users for accesses to non-free data and to make summarization processing of charging information to users or servers (paras. 71-72).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to include the ability to access servers external to the mobile device communications system as taught by Tomoike and to include charging management apparatus as taught by Nishikado. One skilled in the art would

have been motivated to make the combination so that the user can be accurately charged for the use of content.

9. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view Tomoike, and further in view of U.S. Patent No. 6195680 B1 ("Goldszmidt").

Regarding claim 8,

The APA discloses that a mobile device and a network access device under the PPP (point-to-point) protocol is a lower layer of protocol (see applicant's spec, pg. 76, lines 2-4). Note that although the above cited portion is in reference to fig. 9 of the applications drawings, the same relationship exists between the mobile device and network access device in fig. 43.

The APA and Tomoike do not explicitly disclose that the second communications distribution unit assigns an **identifier** to a user session as a series of communications in a layer higher than a layer corresponding to a session managed by said session management device.

Goldszmidt discloses that control server 1.1 could be a gateway through which client requests must pass and which includes a routing function to distribute client requests among servers in the cluster (col. 4, lines 55-58).

Goldszmidt further discloses that the control server assigns different **identifiers** to the streaming servers for delivering the multimedia data (col. 5, lines 38-42).

Goldszmidt still further discloses that streaming system could use HTTP (based on TCP/IP)(col. 16, lines 46-47). Note that the applicant acknowledges that HTTP is an application protocol in an upper layer of TCP/IP (see applicant's spec, pg. 76, lines 4-10).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to use an upper layer protocol such as HTTP and to assign identifiers to the streaming servers as taught by Goldszmidt. One skilled in the art would have been motivated to make the combination so that the identifiers can be used to group the streaming servers into two or more different sets (Goldszmidt, col. 5, lines 38-42).

Regarding claim 9,

The APA and Tomoike do not explicitly disclose a plurality of user session types.

Goldszmidt discloses recording a relationship between the client 1.8 and the streaming servers using different session types as depicted in fig. 1b. Client agent 1.8 is initially assigned a primary streaming server 1.2 that is using an even-numbered port 1.92 (claimed first session type). The primary ID 1.94 and secondary ID 1.96 could be communicated to the client 1.8 and stored in the data structure 1.9 at the client. When the client 1.8 detects a failure in the stream or the primary streaming server, the client agent communicates again (claimed second session type), for example passing the primary ID 1.92 and/or the secondary ID 1.96 to the control server 1.1, requesting

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(based on the secondary ID 1.96) an alternate streaming server 1.3 that is using an odd-numbered port 1.93. The control server 1.1 then switches the client agent to an alternate streaming server 1.3 in the set 1.6 of streaming servers using odd-numbered ports 1.93. The selected secondary streaming server now becomes the primary streaming server for the client agent 1.8, and the set 1.5 that contains streaming servers using even-numbered ports becomes the set for the secondary server. The control server 1.1 preferably communicates the updated identifiers (1.94, 1.96) to the client 1.8 (Goldszmidt, col. 7, lines 10-44).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to use different session types as taught by Goldszmidt. One skilled in the art would have been motivated to make the combination to allow the client to dynamically switch back and forth between the two sets. (Goldszmidt, col. 5, lines 38-42).

Regarding claim 10,

The APA shows in fig. 43 a mobile terminal 100a transmitting a packet in a series of communications by specifying any of the plurality of service providing servers 110-112.

The APA further shows in fig. 43, a load balancer 105a, which received the packet.

The APA still further shows in fig. 43, a plurality of service providing servers for performing the same services as the service providing server specified by the mobile terminal.

The APA does not disclose distributing the packet to any of the plurality of packet gateway devices corresponding to an identifier for the series of communications.

Tomoike discloses that **one of** the proxy gateways 18-1 to 18-n, which is connected to the mobile terminal 12 is selected (para. 63).

Goldszmidt discloses that control server 1.1 could be a gateway through which client requests must pass and which includes a routing function to distribute client requests among servers in the cluster (col. 4, lines 55-58).

Goldszmidt further discloses that the control server assigns different **identifiers** to the streaming servers for delivering the multimedia data (col. 5, lines 38-42).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to use gateways of Tomoike and assign identifiers to the streaming servers as taught by Goldszmidt. One skilled in the art would have been motivated to make the combination so that the load of the gateways can always be equally distributed (Tomoike, para. 20) and so that the identifiers can be used to group the streaming servers into two or more different sets (Goldszmidt, col. 5, lines 38-42).

Regarding claim 11,

The APA discloses that a user session is defined for a TCP. The APA further discloses that the communications in a series of TCP connections performed to complete the process are called a user session under the TCP (see applicant's spec, pg. 6, lines 16-25).

Goldszmidt further discloses that the control server assigns different **identifiers** to the streaming servers for delivering the multimedia data (col. 5, lines 38-42).

Goldszmidt still further discloses that streaming system could use HTTP (based on TCP/IP)(col. 16, lines 46-47). Note that the applicant acknowledges that HTTP is an application protocol in an upper layer of TCP/IP (see applicant's spec, pg. 76, lines 4-10).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to use an upper layer protocol such as HTTP and to assign identifiers to the streaming servers as taught by Goldszmidt. One skilled in the art would have been motivated to make the combination so that the identifiers can be used to group the streaming servers into two or more different sets (Goldszmidt, col. 5, lines 38-42).

10. Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of U.S. Patent No. 5,371,852 ("Attanasio").

Regarding claims 12 and 14,

The APA shows in fig. 43, selecting any of a plurality of service providing servers 110-112 capable of providing a service requested by a mobile terminal 100a from among the plurality of service providing servers such that the loads of the service providing servers can be balanced. The APA further shows a load balancer 105a.

The APA does not show storing a destination address and a source address of a packet received from the load balancer using a unique source port number as a key and setting the unique source port number as a source port number of a packet header, and transmitting a packet to the service providing server with an address of the selected service providing server set as a destination address, and an address of the device set as a source address.

Attanasio discloses a gateway that determines if a message is a port type, then if so, the location of the port number on the message is found. Attanasio further discloses routing the message to the proper computer node within the cluster by altering information on the incoming message so that the message is addressed to the proper node within the cluster. Attanasio still further discloses altering the message so that the source address is the gateway address rather than the address of the source node (col. 5, lines 12-56).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to use encapsulated cluster as taught by Attanasio. One skilled in the art would have been motivated to make the combination

so that the cluster appears as a single computer image to an external host (Attanasio, col. 5, lines 1-11).

11. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Attanasio, and further in view of Goldszmidt.

Regarding claims 13 and 15,

The APA and Attanasio do not disclose an identifier for a user session as a series of communications in a layer higher than a layer corresponding to a session as a series of communications between the mobile terminal and the service providing server in a hierarchical structure of communications is used as the unique source port number.

Goldszmidt discloses that the control server assigns different **identifiers** to the streaming servers for delivering the multimedia data, where one set 1.5 of streaming servers 1.2 is delivering multimedia streams through even-numbered ports 1.92 and another set 1.6 of streaming servers 1.3 is delivering the multimedia streams through odd-numbered ports 1.93 (col. 5, lines 38-42).

Goldszmidt still further discloses that streaming system could use HTTP (based on TCP/IP)(col. 16, lines 46-47). Note that the applicant acknowledges that HTTP is an application protocol in an upper layer of TCP/IP (see applicant's spec, pg. 76, lines 4-10).

It would have been *prima facie* obvious to one of ordinary skill in the art at the

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time of the invention was made to modify the common load balancing system as disclosed by the applicant as prior art to use an upper layer protocol such as HTTP and to assign identifiers to the streaming servers as taught by Goldszmidt. One skilled in the art would have been motivated to make the combination so that the identifiers can be used to group the streaming servers into two or more different sets (Goldszmidt, col. 5, lines 38-42).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Sol whose telephone number is (571) 272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

AMS

6/15/2007